**Amendments to the Claims:**

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1-12. (Cancelled).

13. (Currently amended) A system for validating an item having an optically detectable security feature emitting light at one of a plurality of pre-selected wavelengths, the security feature having a glass or plastic carrier incorporating a rare earth dopant having an intrinsic set of electronic energy levels, the system comprising: means for illuminating the security feature with one or more wavelengths for producing emissions from the rare earth dopant, wherein the permissible wavelengths are those of a modified intrinsic set of electronic energy levels resulting, at least in part, from the interaction between the rare earth elements and the glass or plastic carrier; means for detecting emission from the security feature at a pre-selected wavelength; means for comparing the detected emission with a security profile for the item, wherein the detected emissions includes the fluorescent lifetime of the detected signal corresponding to the emitted radiation from the security feature; means for the electronic selection of photodiode signals based on the fluorescent lifetime of a detected signal corresponding to the emitted radiation from the security feature; and means for indicating a successful validation in the event of the emission matching the security profile.

14. (Original) A system according to claim 13, wherein the means for illuminating the item comprises a pulsed light emitting diode and an illumination filter for ensuring that only a narrow band of wavelengths illuminate the item.

15. (Original) A system according to claim 13, wherein the means for detecting emission comprises a detection filter to filter out all wavelengths except the pre-selected wavelength, and a photodiode to detect the intensity of light passing through the detection filter.

16. (Currently amended) A system according to claim 13, wherein the means for electronic selection of the photodiode signal comprise an electronic filter to filter out all signals except pre-selected signals corresponding to the ~~long-lived~~ rare earth fluorescent emissions.

17. (Currently amended) A method of validating an item according to claim 29, and having an optically detectable security feature comprising at least one rare earth dopant having an intrinsic set of electronic energy levels, for emitting light at at least one of a plurality of pre-selected wavelengths, wherein each of said at least one rare earth dopant is incorporated in the same or a different glass bead, such that the intrinsic set of electronic energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped glass bead, the method comprising ~~the steps of:~~ illuminating the security feature with one or more of said pre-selected wavelengths for producing emissions from the at least one rare earth dopant having said new electronic energy level profile; detecting ~~emission~~ emission(s) from the security feature at least one ~~a pre-selected wavelength~~ wavelength allowed by said new electronic energy level profile; comparing the detected emission with a security profile for the item; detecting and comparing electronic signals from a photodiode based on the fluorescent lifetime of a detected signal corresponding to the emitted radiation from the security feature; and indicating a successful validation in the event of the emission matching the security profile.

18. (New) An optically detectable security marker capable of emitting light at a pre-selected wavelength, the marker comprising:

a rare earth dopant; and

a borosilicate glass carrier incorporating the rare earth dopant, such that the dopant and the carrier interact to provide a fluorescent fingerprint that is different from the fluorescent fingerprint of the rare earth dopant in the absence of the carrier.

19. (New) A marker according to claim 18, wherein the fluorescent fingerprint of the marker comprises at least one wavelength not naturally found in either the dopant, *per se*, or in the undoped carrier.

20. (New) A marker according to claim 18, wherein the glass carrier is a glass bead or glass fiber.

21. (New) A marker according to claim 18, wherein the borosilicate glass comprises, on a weight basis:

| | |
|---|---|
| $SiO_2$ | 51.79% |
| NaO | 9.79% |
| CaO | 7.00% |
| MgO | 2.36% |
| $Al_2O_3$ | 0.29% |
| $FeO/Fe_2O_3$ | 0.14% |
| $K_2O$ | 0.07% |
| $B_2O_3$ | 28.56%. |

22. (New) A marker according to claim 18, wherein the rare earth dopant is a lanthanide.

23. (New) A marker according to claim 18, wherein the interaction between the dopant and the carrier causes emission of visible light in response to optical excitation by visible light.

24. (New) A marker according to claim 18, wherein the interaction between the dopant and the carrier causes emission of visible light in response to optical excitation by ultra-violet light.

25. (New) An optically detectable security marker capable of emitting light at a pre-selected wavelength, the marker comprising:

at least two rare earth dopants; and

a glass bead or plastic bead carrier incorporating the at least two rare earth dopants, such that the dopants and the carrier interact to provide a fluorescent fingerprint that is different from the fluorescent fingerprint of the individual rare earth dopants in the absence of the carrier.

26. (New) A marker according to claim 25, wherein the carrier comprises a glass microbead.

27. (New) A marker according to claim 25, wherein the carrier comprises a borosilicate glass bead.

28. (New) A marker according to claim 27, wherein the borosilicate glass bead comprises, on a weight basis:

| | |
|---|---|
| $SiO_2$ | 51.79% |
| NaO | 9.79% |
| CaO | 7.00% |
| MgO | 2.36% |
| $Al_2O_3$ | 0.29% |
| $FeO/Fe_2O_3$ | 0.14% |
| $K_2O$ | 0.07% |
| $B_2O_3$ | 28.56%. |

29. (New) An item providing an optically detectable security feature by emitting light at a pre-selected wavelength in the visible region, the item comprising: a media and an optically detectable security marker incorporated within said media, said marker comprising at least one rare earth dopant and a glass or plastic carrier incorporating the rare earth dopant, the carrier and the at least one rare earth dopant interacting to provide a fluorescent fingerprint or response in the visible region that is different from that of the at least one rare earth dopant in the absence of the carrier, independently of the media in which the marker is incorporated.

30. (New) An item according to claim 29, wherein the media is a fluid.

31. (New) An item according to claim 29, wherein the item is a laminar media item.

32. (New) An item according to claim 29, wherein the security feature comprises a plurality of security markers, each marker emitting at a different pre-selected wavelength.

33. (New) An item according to claim 29, comprising at least two markers having different concentrations of said at least one dopant, such that the markers emit different intensities of the pre-selected wavelength.

34. (New) An item according to claim 29, comprising a plurality of markers, wherein the emission from at least two such markers decays over a different time period.

35. (New) An item according to claim 33, wherein the emission from said at least two markers decays over a different time period.

36. (New) An item according to claim 29, wherein the carrier comprises a glass carrier.

37. (New) An item according to claim 36, wherein the glass carrier comprises a glass bead or glass fiber.

38. (New) An item according to claim 29, wherein glass carrier comprises a borosilicate glass.

39. (New) An item according to claim 29, wherein the carrier comprises a plastic bead.

40. (New) A method for preparing an optically detectable security feature of increased difficulty for unauthorized reproduction for purpose of counterfeiting, said method comprising providing at least two optically detectable security markers, each of which emits fluorescent light upon exposure to a pre-selected wavelength, each of said markers comprising a rare earth dopant incorporated in a glass or plastic carrier such that the dopant and the carrier interact to provide a fluorescent fingerprint that

is different than the fingerprint of the rare earth dopant in the absence of the carrier, wherein the intensities of the emissions from the said at least two markers, at the pre-selected wavelength, are different.

41. (New) A method for preparing an optically detectable security feature of increased difficulty for unauthorized reproduction, such as, for purpose of counterfeiting, said method comprising providing at least one optically detectable security marker, said at least one marker emitting fluorescent light upon exposure to a pre-selected wavelength, said at least one marker comprising a rare earth dopant incorporated in a glass or plastic carrier such that the dopant and the carrier interact to provide a new intrinsic set of energy levels which is different than the intrinsic set of energy levels of the rare earth dopant by itself or of the undoped carrier, wherein the ratio of the intensities of the emissions of the permissible wavelengths, at two pre-selected permissible wavelengths of the new intrinsic set of energy levels, from the said at least one marker, is different than the ratio of the intensities of the emissions of permissible wavelengths from the rare earth dopant by itself.

42. (New) An optically detectable security feature of increased difficulty for unauthorized reproduction, such as for purpose of counterfeiting, which is obtained by the method of claim 41.

43. (New) A method for preparing an item comprising an optically detectable security marker in a media substrate, said item being of increased difficulty for unauthorized reproduction for purpose of counterfeiting, said method comprising providing at least two optically detectable security markers, each of which emits fluorescent light upon exposure to a pre-selected wavelength, each of said markers comprising a rare earth dopant incorporated in a glass or plastic carrier such that the dopant and the carrier interact to provide a fluorescent fingerprint that is different than the fingerprint of the rare earth dopant in the absence of the carrier, wherein the intensities of the emissions from the said at least two markers, at the pre-selected wavelength, are different, and incorporating the at least two-optically detectable security markers in said media substrate.

44. (New) An item comprising an optically detectable security marker in a media substrate, which is the product obtained by the method of claim 43.

45. (New) A system for validating an item having an optically detectable security marker emitting light at one of a plurality of pre-selected wavelengths, the security feature having a glass or plastic carrier incorporating a rare earth dopant having an intrinsic set of electronic energy levels whereby the combination of the glass or plastic carrier and the rare earth dopant results in a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant in the absence of the carrier or the undoped carrier, the system comprising: a light source for illuminating the security feature with one or more wavelengths for producing emissions from the rare earth dopant permitted by the new electronic energy level profile; a detection filter capable of detecting emission from the security feature at a pre-selected wavelength permitted by said new electronic energy level profile; an electronic filter capable of electronically selecting photodiode signals based on the fluorescent lifetime of a detected signal corresponding to the emitted radiation from the security feature; and an indicator for indicating a successful validation in the event of the emission matching the security profile.

46. (New) A system according to claim 45, wherein the light source comprises a pulsed light emitting diode and an illumination filter for ensuring that only a narrow band of wavelengths illuminate the item.

47. (New) A system according to claim 45, wherein the detection filter filters out all wavelengths except the pre-selected wavelength, and wherein said system further comprises a photodiode to detect the intensity of light passing through the detection filter.

48. (New) A system according to claim 45, wherein the electronic filter is capable of filtering out all signals except pre-selected signals corresponding to the rare earth fluorescent emissions permitted by the new energy level profile.

49. (New) A device for determining the authenticity of an item, including an optically detectable security feature incorporated therewith as set forth in claim 29, wherein the optically detectable security feature comprises a marker comprising a carrier incorporating at least one rare earth dopant, each said rare earth dopant by itself having an intrinsic set of electronic energy levels, the combination of the carrier and the at least one rare earth dopant resulting in a new energy level profile that allows transitions different to those allowed by either the rare earth dopant(s) in the absence of the carrier or the undoped carrier; a light emission source for illuminating said item at a wavelength which causes fluorescence of said marker according to said new energy level profile; and a comparator and detector for reading the resulting fluorescence, whereby said device is capable of detecting, based on the resulting fluorescence of an item illuminated thereby, if said item includes said marker and is authentic or does not include said marker and is a counterfeit item.

50. (New) A method of validating an item having an optically detectable security feature and a known security profile, said security feature comprising at least one rare earth dopant having an intrinsic set of electronic energy levels, wherein each of said at least one rare earth dopant is incorporated in the same or a different plastic or glass carrier, such that the intrinsic set of electronic energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped plastic or glass carrier, the method comprising: illuminating the security feature with one or more pre-selected wavelengths for producing emissions from the at least one rare earth dopant having said new electronic energy level profile, detecting emission(s) at at least two pre-selected wavelengths allowed by said new electronic energy level profile, determining the ratio of the intensities of the emissions at said two pre-selected wavelengths and comparing said ratio with the ratio, at said two pre-selected wavelengths, based on the known security profile for said security feature and, indicating a successful validation in the event of the determined ratio matching the ratio in said security profile.